

NASA SCIENCE MISSION DIRECTORATE

Earth Science Division Applied Sciences Program Crosscutting Solutions Program Element FY 2007-2011 Plan

FINAL DRAFT
June 12, 2007



*Expanding and accelerating the realization of economic and societal
benefits from Earth science, information, and technology*

FINAL DRAFT

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NASA Science Mission Directorate
Earth Science Division
Applied Sciences Program

Applied Sciences for the Crosscutting Program Element

This document contains the Crosscutting Solutions Program Element Plan for Fiscal Years 2006-2010. This plan derives from direction established in the Earth Science Applications Plan, and the plan aligns with and serves the outcomes established in the NASA Integrated Budget and Performance Document.

The Program Manager and the Applied Sciences Program leadership have reviewed the plan, and they agree that the plan appropriately reflects the goals, objectives, and activities to serve the NASA Earth Science Division and its Applied Sciences Program.

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NASA Earth Science Division: Applied Sciences Program Crosscutting Solutions

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I. Purpose and Scope of the Crosscutting Solutions Program Element

Context

The Crosscutting Solutions Program Element is part of NASA's Science Mission Directorate, Earth Science Division's Applied Sciences Program. NASA's Science Mission Directorate, Earth Science Division seeks: to increase knowledge of the Earth system, including its response to natural and human-induced changes, and to enable improved predictions of climate, weather, and natural hazards.

Purpose of the Applied Sciences Program Crosscutting Solutions Program Element

The Applied Sciences Program extends the results of NASA Earth science research and knowledge beyond the science and research communities to contribute to national priority applications with societal benefits. The Applied Sciences Program employs a systems engineering approach, develops partnerships with operational federal agencies and national organizations, and facilitates the transition from research to operations to accomplish this goal. The Program identifies integrated system configurations that can benefit from benchmarked assimilation of science research results into decision support tools, therefore achieving sustainable solutions for society, the nation and the world. The Program benefits citizens through contributions to federal partners with connections to state, local, and tribal governments. The Applied Sciences Program consists of two Program Elements:

- National Applications Program Element - focuses on the “demand side” (policy and management decisions) of the Applied Sciences Program architecture (Figure 1) through partnerships with operational agencies to infuse Earth science research results into specific decision support systems (DSS) in twelve areas of national priority.
- Crosscutting Solutions Program Element - focuses on NASA Earth System models, Earth Observatory measurements, and related research assets and investments, known as the “supply side” of the Applied Sciences Program architecture (Figure 1), through engineering activities to integrate sub-systems into system solutions supporting the twelve National Applications. These activities are enabled by a comprehensive, evolving knowledge base of NASA science research results, networks of contributing organizations, and highly-skilled, specially-trained human capital.

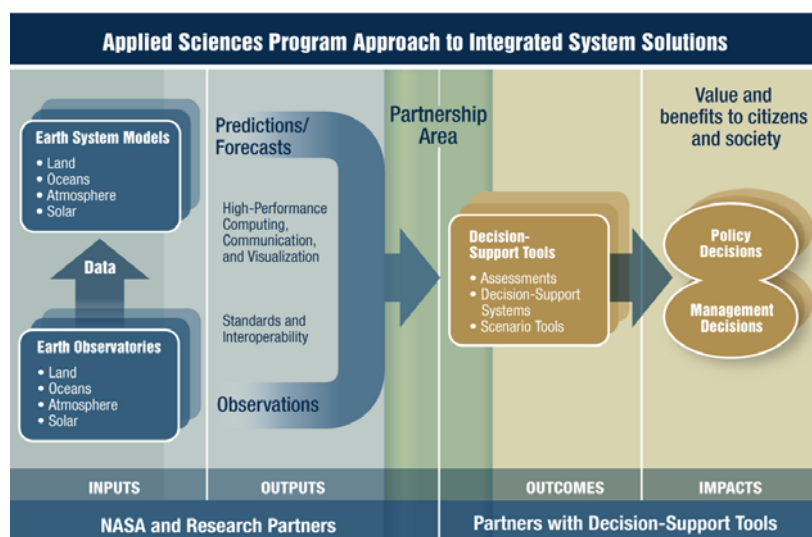


Figure 1: Applied Sciences Program Approach to Integrated System Solutions

Relationship Between Program Element and Other Entities

The Crosscutting Solutions Program Element is an integral part of a complex network of entities contributing to the goals of NASA and other federal agencies.

Internal to the Applied Sciences Program, Crosscutting Solutions is closely coupled to National Applications. It is also closely coupled to the other programs in the Earth Science Division: the Research and Analysis, Flight Missions, Data and Information Management, Technology, Sub-Orbital Science, Education, and Outreach Programs.

The primary resource base for Crosscutting Solutions is NASA Earth science research results. This is derived from the results of Earth Science Division investments contributed by funded researchers through competitive solicitations. The Research and Analysis Program is the primary administrator of the investment portfolio. The Research and Analysis Program; NASA Field Centers; partner Earth science laboratories; and other NASA-funded entities from government, academia, and industry provide Earth science models, observations and information products derived from remote sensing instrumentation deployed on NASA Earth system observation spacecrafts, sub-orbital platforms and ground-based networks, and the data products managed in the Earth system science information systems (such as the Distributed Active Archive Centers (DAACs)).

The systems engineering approach employed by Crosscutting Solutions requires an intimate familiarity with the past, present, and planned outputs from these entities, the capability to understand the practical applications of the outputs to national and international priorities, and an ability to build working partnerships and cooperative relationships to optimize the use of the entities' outputs as potential inputs for decision support.

Scope of the Program Element

The primary focus of the activities in the Crosscutting Solutions Program Element is to extend the benefits of results from NASA-sponsored Earth system science research and development for societal benefit. This is accomplished through the development or enhancement of systems, knowledge bases, networks, integrated system solutions (ISS), and human capital necessary to enable the Applied Sciences Program to achieve its objectives.

The Program Element has four subordinate functions. These functions are:

- Integrated Benchmarked Systems (IBS)
- Solutions Networks (SN)
- Geoscience Standards and Interoperability (GSI)
- Human Capital Development (HCD)

In addition, the Program has specific areas of focus for FY07. These will be conducted within the scope of the four functions. The areas of focus are:

- Utilization of un-applied NASA assets and capabilities
- Implement an accelerated simulation and testing capacity to evaluate research result-oriented solutions for decision-making
- External - Contributing to National and International Priorities

Purpose for this plan

The purpose of this document is to:

- Articulate the scope and purpose of the Crosscutting Solutions Program Element
- Describe the strategy for meeting the objectives of this Program Element
- Serve as a Program Element management tool
- Link Program Element activities to higher level performance metrics (documented in the NASA Integrated Budget and Performance Document (IBPD) Program Assessment Rating Tool (PART))
- Communicate Program Element implementation strategies to stakeholders

The Crosscutting Solutions Program Element Plan covers a five-year period and is updated every year. The Plan documents the detailed planning for all the Sub-Elements for the current year and projected activities for the future years. This document covers the plan from Fiscal Year (FY) 2007 through FY11.

II. Goals and Objectives

The Crosscutting Solutions Program Element supports NASA, the Science Mission Directorate, and specifically the Earth Science Division Applied Sciences Program via the goal of reducing the time required to evaluate candidate integrated system solutions for the National Applications while improving the quality of the evaluations. Two principle objectives accomplishing this are:

- Propose implementation strategies, processes, and establish partnerships that produce results and solutions supporting integrated system solutions configurations designed to evaluate, verify, validate, and benchmark the benefits of Earth science research results for policy and decision-making.
- Support NASA contributions to national and international programs through systems engineering and applied science research that leads to scalable, systematic, and sustainable solutions and processes using NASA research results. This will facilitate establishing the basis for potential, effective transition from research to operations. The programs include, but are not limited to: Climate Change Science Program (CCSP), Climate Change Technology Program (CCTP), Intergovernmental Panel on Climate Change (IPCC), United States Weather Research Program (USWRP), World Meteorological Organization (WMO), Earthscope, Committee on Environment and Natural Resources Subcommittee on Disaster Reduction (CENR/SDR), US Group on Earth Observations (USGEO), *ad hoc* Group on Earth Observations (GEO), National Academy of Sciences (NAS), World Summit on Sustainable Development (WSSD), and Commercial Remote Sensing Space Policy (CRSSP).

Program direction is guided by the NASA Strategic Plan Goal 3A, Earth Science Strategy and science research activities (e.g. Observing System Simulation Experiments (OSSEs), Project Columbia, the Joint Center for Satellite Data Assimilation (JCSDA), and the Earth Science Gateway (ESG)). The Program also promotes use of, or contributions to, initiatives such as the Global Information Grid (GIG); Federal Enterprise Architecture (FEA); State Enterprise Architecture (SEA); the national laboratories; and international commitments that influence the design, direction, and activities of the Program.

III. Program Management and Partners

Program Management Structure

The NASA Applied Sciences Program in the Earth Science Division of the Science Mission Directorate at NASA Headquarters (HQ) is the program office responsible for administering the Crosscutting Solutions Program Element.

Figure 2 illustrates the overall structure of the Crosscutting Solutions Program Element, its Sub-Elements and projects within each Sub-Element for FY07. It also demonstrates how this Program Element fits within the overall structure of the Applied Sciences Program.

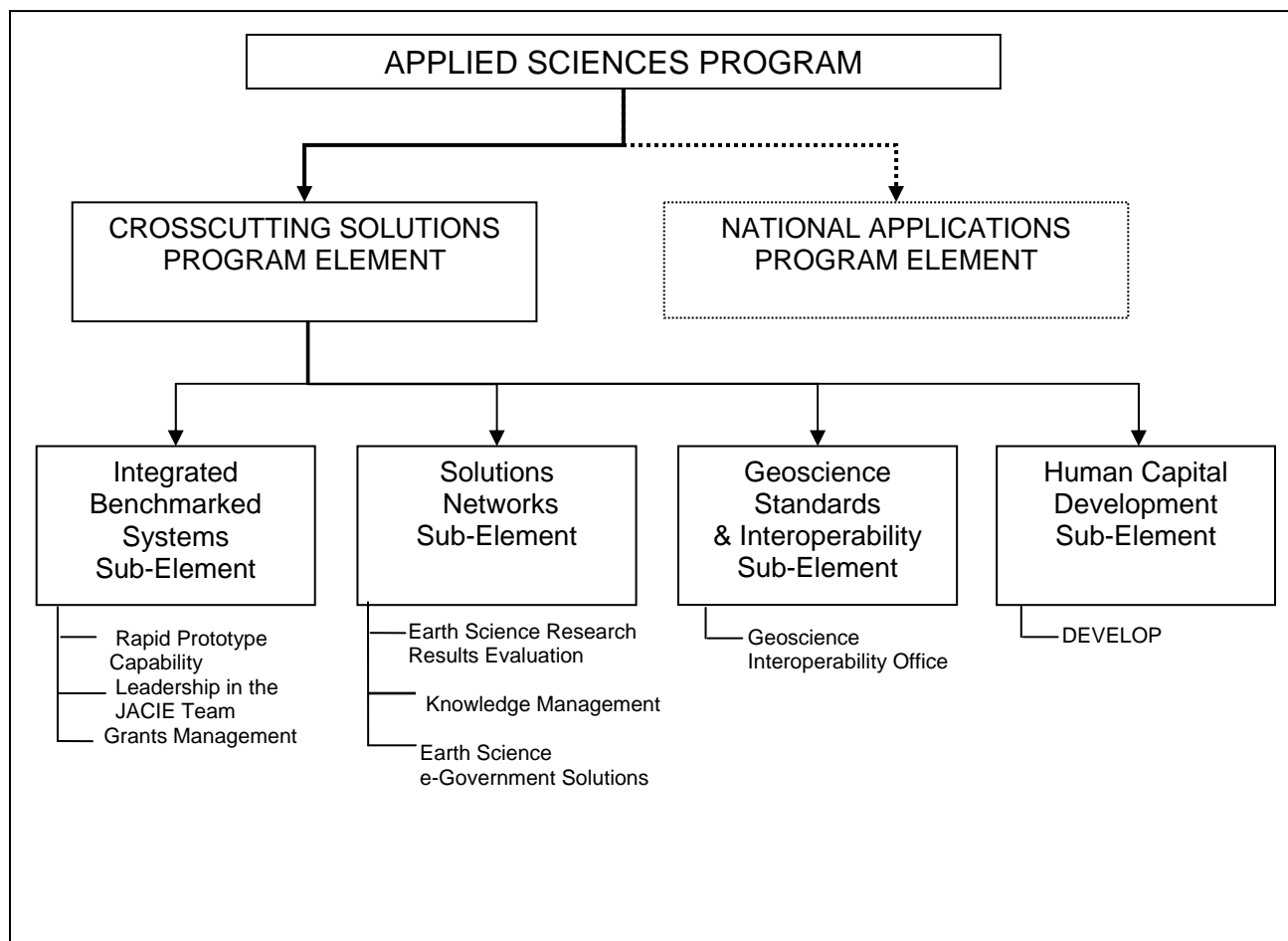


Figure 2: Structure of Crosscutting Solutions Program Element

The primary focus of activity within the Sub-Elements is described in Table 1 below:

Table 1: Crosscutting Solutions Sub-Elements

| FUNCTION | PRIMARY ACTIVITY |
|---|--|
| Integrated Benchmarked Systems | Perform evaluation, verification, validation, and benchmarking of NASA observations and predictions being considered as integrated system solution configurations that demonstrate potential use in decision support systems and tools associated with the National Applications Program Elements |
| Solutions Networks | Establish and maintain relationships with Earth science research organizations, derive candidate solutions-sets from NASA-funded research projects, maintain a knowledge base of activities, capabilities, plans, and evaluated research results for tactical and strategic support to the Applied Sciences Program |
| Geoscience Standards and Interoperability | Facilitate development of, and enable Program compliance with, national and international standards and interoperability protocols for the exchange of data and information produced by federal agencies |
| Human Capital Development | Develop a cadre of human resources possessing real world experience associated with integrated system solutions by creating rapid prototype solutions using Earth system science research results as inputs to decision support systems for federal, state, local, and tribal applications consistent with the National Applications |

Program Performance

The Program strives to maintain core capabilities in each of its Sub-Element areas: IBS, SN, GSI, and HCD. Whenever possible, the Crosscutting Solutions Program Element applies competitive sourcing to optimize the quality and caliber of the products and services provided by selected organizations; and to maintain an appropriate balance of sustainable capacity for NASA program administration.

General performance expectations for each Program Sub-Element involve contribution to the goals and objectives of the Program, require rigorous management of resources to realize optimal performance for the authorized budget, and require regular progress/issue reporting. The methods employed to meet these performance expectations depend on the type of activity within the Sub-Element and are documented in the respective Sub-Element project plans. Sub-Element activities are required to develop project plans that include: project objectives, team members, work breakdown structure, budget, schedule, deliverables, and metrics. The approval hierarchy for the project plans consists of the Sub-Element Project Manager, NASA Field Center senior Earth science manager, and the Crosscutting Solutions Program Element Management at NASA HQ.

The primary methods for achieving performance include:

Competitive Solicitations: Solicitations are developed to facilitate opportunities for universities, government organizations, not-for-profit organizations, private sector organizations, and NASA Centers

to submit proposals for peer review. The procurement may encompass cooperative agreements, contracts, and grants. Solicited projects require project managers and project plans.

Congressional Mandate activities: NASA receives congressional direction to pursue specific activities whose administration is assigned to the Applied Sciences. NASA program and project managers work with principal investigators representing congressionally directed projects to align activities with the Applied Sciences Program goals and objectives. The Applications teams include these organizations in existing networks and collaborate with them, as appropriate, in contributing to integrated benchmark solutions with partner agencies.

a.

Sub-Element Management

The Crosscutting Solutions Program Manager, together with the management at the Field Centers, is responsible for designating Sub-Element Project Managers for each Sub-Element. Sub-Element Managers are responsible for:

- Developing and nurturing relationships with current and potential partner organizations that contribute to Crosscutting Solutions goals and objectives through regular communication, meetings, workshops, and other appropriate means
- Identifying and maintaining a network of organizations and contacts for activities associated with Crosscutting Solutions goals and objectives and pursuing formal agreements, as appropriate, with partner organizations
- Developing and executing Sub-Element project plans
- Ensuring that all activities and functions within Sub-Elements are executed efficiently and within cost and schedule targets allocated and administered by the Crosscutting Solutions Program Manager
- Coordinating the transfer and management of funds allocated to NASA Centers from the Program Office at HQ to appropriate Centers if more than one Center is involved with a Sub-Element

Program Management Principles

The Crosscutting Solutions Program Element Management and its Sub-Element teams conduct the Program according to the following guidelines and principles:

One NASA

The Program management and members of each team work collaboratively to efficiently achieve the goals of the entire Applied Sciences Program. Teamwork is emphasized amongst and between Centers, with all appropriate aspects of NASA and the Earth Science Division, and with the partner organizations.

Partner Focus

The Element teams focus on interagency, intergovernmental, and community-of-practice partner organizations and recognize the partner organizations' participation in extending the benefits of Earth system science results. In most cases, partners bear the responsibility for policy and management decisions. The partners are potentially changing their systems to accommodate Earth system science observations and products. Therefore, teams need to maintain focus on the partners, and direct attention and recognition toward them for the improvements in decision-making. If the NASA-led teams are cognizant of data products and/or models from non-NASA sources that may be beneficial to partners, this information will be shared.

Balance Between Competitive Sourcing and Directed Projects

The Office of Management and Budget (OMB) requirement in the IBPD is for at least eighty percent of the Program budget to be used in activities that have been peer reviewed and competitively sourced. The

Program embraces the use of competitive sourcing techniques as a tool for increasing efficiency, cost-effectiveness, and innovation in the Program and maximizing the overall capacity of the nation to perform this work. Directed funding to projects will only be used when competitive sourcing techniques cannot meet the requirements for the activity. For example, directed funding to NASA Centers is necessary to perform many required inherently governmental functions.

NASA Headquarters - A Node, Not The Hub

The Sub-Element teams may work with limited daily guidance from the Crosscutting Solutions Program Element Manager. The teams are expected to take initiative to understand and accomplish the Program goals. The Program Manager and teams keep each other informed about progress, schedule changes, issues, and opportunities in order to assist each other to accomplish the goals and objectives. The Program, Sub-Element, and project Managers establish connections and appropriate agency-to-agency agreements to enable the teams' direct working relationships with the partner organizations and representatives.

Set and Meet Project Goals

The Program Manager and teams set challenging and realistic goals, schedules, and deliverable items in project plans. The Managers develop plans, goals, and schedules in a collaborative environment with the team. In case of differences within the team on programmatic plans, the Program Manager has the responsibility to facilitate and finalize decisions.

Share Information

The Program Manager and teams share information and inform the entire Applied Sciences Program of successful operating procedures, lessons learned, pitfalls, beneficial activities, or other relevant information in order to assist all participants in the community-of-practice.

Innovation and Leadership

The teams have the latitude to experiment, innovate, take initiative, and try different approaches in developing mechanisms to meet objectives. As appropriate, teams may pursue several techniques in parallel to identify effective methods, which will extend NASA Earth-System science results to partners' decision making.

Working with Partners' DSSs

While NASA helps develop prototypes and guidelines as part of the benchmarking process, NASA and the Applied Sciences funded entities will not engage in direct interaction with a partner's customers or in the independent development of any DSS for the partner. NASA may consider, on a case-by-case basis as approved by the Program leadership, contributing in a supporting role to enhance a DSS under development in a partner-led effort.

Exit Strategies

In developing projects with partners, the Element teams anticipate and articulate expectations related to disengaging and terminating NASA involvement as activities extend beyond NASA's authorized role. In addition, the determination, positive or negative, that Earth Science Division research results or products have value to a partner's decision tool, or subset of the tool, is the primary objective of an activity. A negative determination is not a failure; rather, it allows a clear answer and permits the team to focus energy and resources in proper directions.

Program Element Roles and Responsibilities

The roles and responsibilities of the contributors to the Crosscutting Program Element are given below:

NASA Field Centers

The NASA Field Centers supporting the Earth Science Division include Ames Research Center (ARC), Goddard Space Flight Center (GSFC), Langley Research Center (LaRC), Marshall Space Flight Center (MSFC), Stennis Space Center (SSC), and the NASA-affiliated Jet Propulsion Laboratory (JPL). NASA Centers have unique capabilities and expertise related to Earth system science, research, technology, systems engineering, project management, and technology transfer, all of which contribute to Crosscutting Solutions. Program Elements support and utilize strengths and expertise from all Centers to serve the Earth Science Division and Applied Sciences Program objectives. NASA Centers are expected to contribute, compete, coordinate, and collaborate as appropriate for the overall success of the Crosscutting Solutions Program Element.

NASA Headquarters

NASA HQ serves as the program office and contributes overall administration and management for the Crosscutting Solutions Program Element. The Program Manager establishes Program direction consistent with the Applied Sciences Program, Earth Science Division, Science Mission Directorate, NASA, and administration priorities, goals, and objectives. In addition, the Program Manager addresses team issues, raises concerns to Earth Science Division management, and interacts with partners at programmatic levels as needed. Overall, the Program Manager advocates and champions the Program Elements internal and external to NASA.

NASA Partners

Partners and stakeholders include interagency and intergovernmental collaborations through the CCSP, CCTP, IPCC, USWRP, WMO, Solid Earth Science Working Group (SESWG), Earthscope, USGEO, GEO, WSSD, and CRSSP. Program partners also include Space Act Agreements with commercial remote sensing providers such as DigitalGlobe, GeoEye, and EarthSat Corporation.

The NASA Applied Sciences Program strategic approach, Program Elements and projects have been introduced, reviewed, and integrated into the following national and international programs that embrace NASA's participation in integrated system solutions:

- CCSP (www.climatescience.gov)
- CCTP (www.climatetechnology.gov)
- Committee on Environmental and Natural Resources (CENR) U.S. Group on Earth Observations (<http://usgeo.gov/>)
- U.S. Weather Research Program (www.oar.noaa.gov/organization/uswrp.html)
- CENR Subcommittee on Disaster Reduction (www.sdr.gov)
- CRSSP implementation (<http://crsp.usgs.gov>)
- National Academy of Sciences Roundtable for Sustainability (www.nas.edu)
- Global Earth Observing System of Systems (GEOSS)

The Program is collaborating with the IPCC (www.ipcc.int), WMO (www.wmo.int), GEO (<http://earthobservations.org/>), and WSSD (<http://www.iied.org/wssd>).

Project Management

The Crosscutting Solutions Sub-Elements provide status reports to the Program Manager according to the frequency specified in the individual Sub-Element project plans. The reports will include, but are not limited to:

- Status of activities and accomplishments toward stated and unplanned objectives
- Schedule
- Budget and spending plan

- Deliverables and accomplishments
- Important issues and risks

In addition, the Applied Sciences Program periodically holds Program reviews where Sub-Elements describe activities relative to the Program objectives.

Program Element Linkage to Associations and Publications

Associations and publications, which link to the Crosscutting Program Element, are given below:

Associations and Conferences

The primary associations and conferences for the Crosscutting Solutions Program Element include, but are not limited to:

- American Meteorological Society (AMS)
- American Geophysical Union (AGU)
- American Institute of Aeronautics and Astronautics
- International Symposium on Remote Sensing of Environment (ISPRS)
- International Remote Sensing for the Environment (IRSE)
- International Geoscience and Remote Sensing Symposium (IGARSS)

Publications

The primary publications for conveying plans and results of the Program Element include, but are not limited to:

Trade Journals

- *EOS Magazine*
- *Earth Imaging Journal*
- *Weather*

Peer Review Journals

- *IEEE Computing in Science and Engineering*
- *IEEE Systems Engineering (check on specifics)*
- *PERS – Photogrammetric Engineering and Remote Sensing*
- *Bulletin of the American Meteorological*
- *Journal of Applied Meteorology/Weather*
- *Remote Sensing for the Environment*

IV. Crosscutting Solutions Activities

Context for Activities

The Crosscutting Solutions Program Element contains a portfolio of tactical and strategic activities to accomplish Program objectives and to prepare for future challenges of the Earth Science Division and Applied Sciences Program.

NASA partners with national organizations and federal agencies to evaluate, verify and validate, and then benchmark research results that have the potential to improve future operational systems. There are two systematic approaches to accomplish this objective. One approach focuses on **solutions** that identify configurations describing the integration of Earth science observations and predictions, resulting from NASA research, into decision support tools of partnering organizations that benefit U.S. and global citizens. The second approach focuses on **transitioning research result capabilities** to operational systems through adoption or adaptation by appropriate federal agencies or national organizations. NASA expertise at NASA Field Centers is employed to conduct analytical processes designed to transfer research results to partner organizations efficiently and effectively through integrated system solution projects.

Tactical Activities

Crosscutting Solutions provides support for the following activities undertaken for each of the National Applications Program Element projects. Each project activity proceeds through one or all of the following steps depending on maturity at the time of selection (Figure 3):

- Evaluation – Identify DSS, developed by federal agencies and other partners, that are a national priority and can be enhanced by NASA Earth Science Division research results. Develop the specifications for how candidate DSS can be augmented by assimilating NASA Earth Science Division observations and predictions
- Verification – A life cycle process to ensure Earth system science products being developed meet stated specifications (function, performance, and design) within the context of an identified integrated system solution configuration
- Validation – A process to ensure completed products (software, algorithms, models) effectively serve the functional requirements of an integrated system solution configuration
- Benchmark – A standard by which a product can be measured or judged (e.g. the measure of DSS performance with assimilated NASA measurements), in terms of operations and functions, with respect to performance without the NASA results. The benchmarking process is required to support adoption of innovative solutions into operational environments that affect life and property

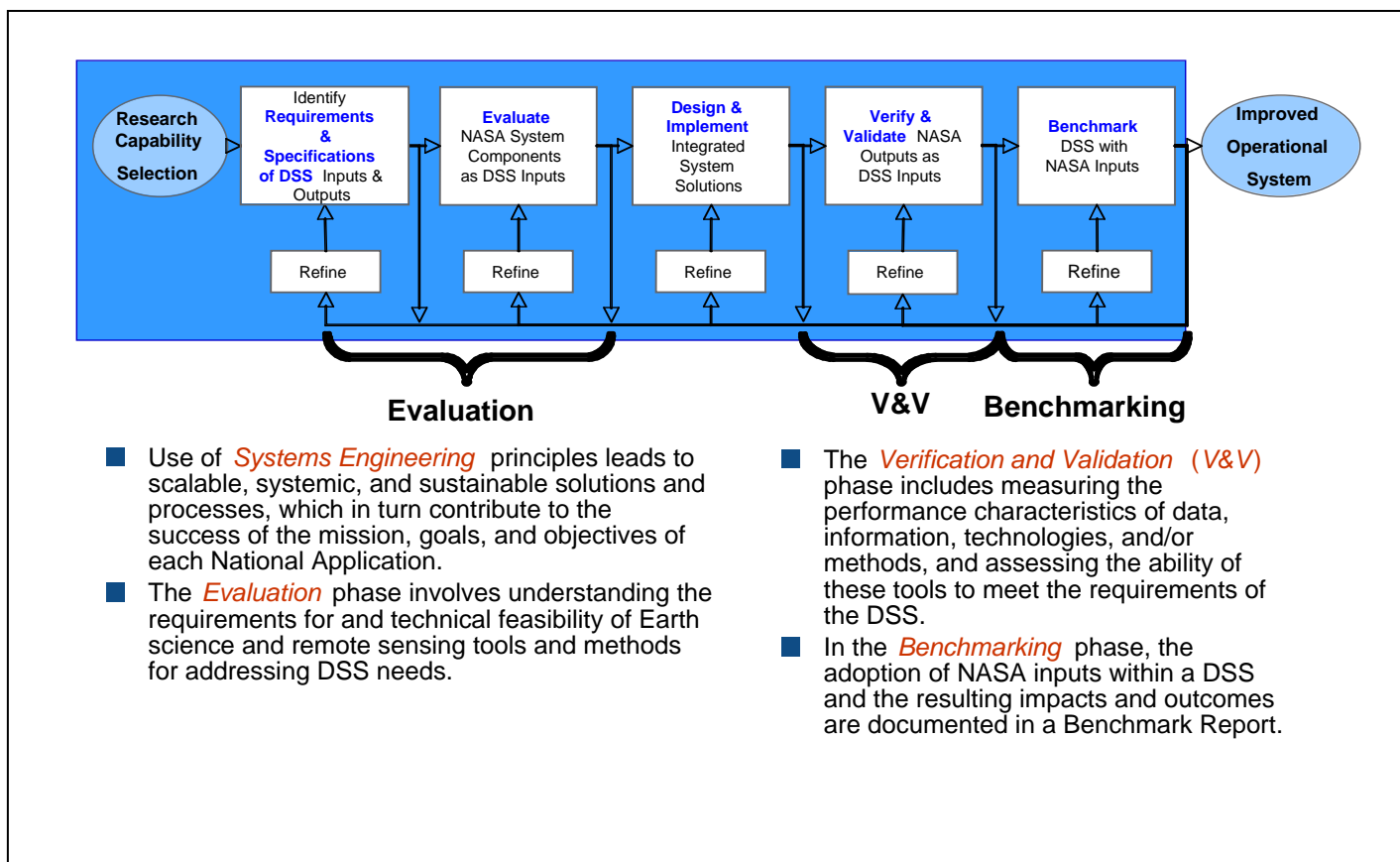


Figure 3: Systems Engineering Process used by the NASA Applied Sciences Program

The Crosscutting Solutions Program Element ensures systems engineering processes and practices are performed and conducted for each integrated system solution project administered through the Applied Sciences Program. The Program benefits from NASA systems engineering capacities, including the OSSE capacity at GSFC, the Independent Verification and Validation (IV&V) capacity in West Virginia, the data handling capacity in each of the DAACs, and the science capacity at Centers and Earth science laboratories.

Strategic Activities

The net result of all activities is to serve applications of national priority and to make contributions to NASA's strategic commitments to CCSP, CCTP, IPCC, USWRP, WMO, USGEO, GEO, WSSD, and CRSSP.

Strategic activities within the Crosscutting Solutions Program Element support development and/or implementation of:

- Earth Science research result harvesting and knowledge base configuration
- Networks of organizations and experts
- Demonstrations, prototypes of candidate configurations (solutions)
- Next generation of contributors to the Program

This is done to facilitate effective achievement of the Applied Sciences Program goals and objectives. To this end, activities within this Program Element include:

- Establishing global standards and interoperability protocols for system and data interfaces
- Developing niche-oriented human capital focused on interdisciplinary systems engineering, which facilitates the evolution of networks to enable distributed organizations to effectively contribute to solutions whose total capacity is greater than the sum of its parts

The desired impact for the resulting networks, standards, prototypes, processes, guidelines, integrated system solutions, human capital, and outreach is for communities of practice and their beneficiaries to optimize the net gain from the nation's investment in NASA Earth System science research. This is accomplished through the systematic transition of research results to serve society through operational use of space-based observations and predictions in decision-making processes for applications of national priority.

The Program has strategic connections with national e-Government activities including the:

- Federal Enterprise Architecture (FEA)
- Federal Geographic Data Committee (FGDC)
- Geospatial One Stop (GOS)
- OpenGIS Consortium (OGC)

The Program has strategic connections with national, Agency, Directorate, and Division technology and infrastructure development, including:

- High-end computing initiatives (e.g. Project Columbia, Project FastPath)
- Data management initiatives associated with Global Climate Observing System (GCOS), Global Terrestrial Observing System (GTOS), Global Ocean Observing System (GOOS), Earth Observing System Data Information System (EOSDIS)
- Graphic Retrieval and Information Display (GRID) initiatives including the Lambda Rail
- Data portal and web service projects including the National Science Foundation (NSF) cyber infrastructure program
- Earth Science Gateway (ESG)
- Modeling initiatives including the Earth System Modeling Framework (ESMF) and Sun-Solar System Modeling Framework (SSMF)

Crosscutting Solutions Sub-Elements and Projects

1. Integrated Benchmarked Systems Sub-Element

The implementation of the IBS Sub-Element is divided into three projects listed below:

- Rapid Prototyping Capability
- Leadership in the Joint Agency Committee for Imagery Evaluation Team
- Grants Management

Common activities present within these three projects or performed under solicited projects include but are not limited to specific engineering and science support processes (systems engineering, analytical techniques and algorithmic use, requirements analysis, etc.) as dictated by national applications projects:

- Evaluation of decision support tool (DST) input requirements
- Identification of NASA measurements and model outputs to serve DST input requirements
- Assessment and assimilation of NASA outputs as inputs to DSTs, V&V of NASA observations and predictions within the context of DST performance
- Participation with partnering organizations in benchmarking the operational performance of DSTs with integrated NASA research results
- Perform characterization/calibration-validation of commercial sources of remote sensing observations for Earth system science research

These efforts support benchmarking the use of NASA observations and predictions described in integrated system solutions projects for use in decision support systems and tools, associated with the National Applications Program Elements.

b. Rapid Prototyping Capability (RPC)

Crosscutting Solutions provides for an early, developmental, low-cost process investment that efficiently identifies future, potential, configurations for integrated system solutions. The overall goal of the Rapid Prototyping Capability (RPC) is to provide for an accelerated simulation and testing of candidate configurations with current and future Earth observation mission measurements and research results in accordance with NASA's 2006 Strategic Plan. Experiments and test configurations are developed, based on NASA-funded research, to demonstrate potential benefits to partner agencies' decision support processes and/or operational systems. Collaboration exists with NASA instrument calibration and verification teams, science teams responsible for verifying and validating the approximately 2500 Earth-system science observation products developed and delivered through the EOSDIS, along with all other community partners (Earth Science Information Partnership (ESIP); Research, Education, and Applications Solutions Network (REASoN); and data assimilation capacities provided by the JCSDA). To this end, the RPC will facilitate systematic evaluation of research capabilities, based on the use of specific research results in a simulated operational environment in order to evaluate components and/or configurations that could be considered for verification, validation, and benchmarking for transition from research to operations and/or into an integrated system solution. Guidelines for prototyping activities and efforts can be found in *NASA Science Mission Directorate, Applied Sciences Program Rapid Prototyping Capability (RPC) Guidelines and Implementation Plan*, located in Appendix C. Guidance and instruction regarding the approach, requirements, practices, deliverables, participants, and processes to achieve accelerated results for decisions can be found in this document.

c. Leadership in the JACIE Team

Through the JACIE team, NASA participates with the National Geospatial Intelligence Agency (NGA) and the United States Geological Survey (USGS) in collaborative interagency approaches for characterization of commercial remote sensing products for government and Earth system science research community use. As part of this effort, NASA leads the JACIE team by coordinating with NGA and USGS to leverage characterization expertise and by interacting with industry to communicate and share calibration and characterization results. NASA forms partnerships with experts in academia, including the University of Arizona and South Dakota State University to perform thorough characterizations of commercially provided, aerospace-derived remote sensing data products. JACIE characterization results and related activities are communicated to the science community through face-to-face meetings, an annual JACIE workshop, NASA Technical Memos, and peer-reviewed publications.

Recognizing that commercial remote sensing systems have the capacity to serve a portion of science research measurement needs, past studies of NASA's Earth-system science requirements for commercial data/products, specifically with respect to land use and land cover observations for carbon cycle and water cycle research, were performed. Results of these studies provided purchase guidelines and characterizations of such data/products to be used by the science community. Data requirements and JACIE-related activities manifest NASA's contribution to the implementation of the Administration's Commercial Remote Sensing Space Policy.

d. Grants Management

The Decisions Solicitation ('05) run by the Applied Sciences Program funded results-oriented projects focused on systematic methods to enable the integration of Earth system science research results (e.g., spacecraft observations, model predictions, and visualization techniques) into existing decision support tools related to one or more of the twelve Applications of National Priority. Specifically, the Crosscutting Solutions Program sub-element, Solutions Networks, contains two projects that were selected for implementation (Table 3).

The Mississippi Research Consortium (MRC) participates in special solicitations which focus on accelerating uses of science data products, for decision-making, from NASA's evolving Earth Science flight missions, data, and predictive models within the community conducting Earth science applications (Table 2).

The REASoN solicitation provides a distributed network of observations and information providers for Earth science, applications and education. Fourteen applied sciences projects within a portfolio of forty-one projects resulted from the competitive sourced Cooperative Agreement Notice (CAN) conducted in FY03. Proposals from industry, academia, and government provided solutions for utilization of NASA Earth observations, science model predictions, and decision support tools to benchmark integrated solutions to serve society in understanding and predicting the future of the Earth system, developing policy and resource management decision support systems, and creating educational tools to inspire and train current and future generations of scientists.

The Program Element does not plan to have any specific Congressional Mandates from year to year, but does anticipate based on historical information that there will be some administration required for projects to be undertaken at the direction of Congress. All Crosscutting Solutions Program Element proposals, including Congressionally Mandated must be peer reviewed and, if necessary, iterated with the recipients until determined to

be suitable for funding. Proposals determined suitable for funding means proposals must be aligned to NASA's mission, have technical merit, and be cost reasonable. The administering field centers (ARC – Decisions '05 and SSC) will provide the appropriate services for procurement, coordination, tracking and funding for the Program Element.

The list of Congressional Mandates assigned to, and solicitation projects being conducted and/or managed by, the Crosscutting Solutions Program element during FY07 are shown in the following tables.

Table 2: Congressional Mandates for Applied Sciences Program FY06

| Name | Description | Total (\$K) |
|--|---|-------------|
| Directed Earmarks | | |
| Earth Science Applications | Earth Science Applications Program. \$5M above the President's request for FY05 for NASA Earth Science Applications Program for competitively-selected applications projects. Integrated results of NASA's Earth observing systems and Earth system models into decision support tools to serve Applications of National Priority: Homeland Security, Coastal Management, Agricultural Efficiency, Water Management and Disaster Management | \$ 5,000 |
| Regional Applications Center for the Northeast (RACNE) | Regional Application Center for the Northeast - Cayuga Community College in New York | \$ 1,500 |
| Institute for the Applications of Geospatial Technology (IAGT) at Cayuga Community College, Inc. | | \$ 2,000 |
| Coppin State University | Middle Passage Project to support the Geospatial Sciences Laboratory | \$ 200 |
| Utah State University | Utah State University in Logan, Utah for the Intermountain region Digital Image Archive and Processing Center | \$ 250 |
| | | |
| | | |
| | | |

Table 3: Decisions '05 Projects

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|--|
| Decisions '05 Projects – Solutions Networks |
| The following describes the NASA Applied Sciences Program solicitations projects to be conducted in FY07 under the Crosscutting Solutions Program Element. |
| Institute of Global Environment & Society, Inc. (IGES) |
| WaterNet: A Water Cycle Solutions Network |
| North Olympic Peninsula Resource Conservation & Development (NOP RC&D) |
| Evolving a Solutions Network of Resource Conservation and Development Councils, Watershed Teams, and NASA Research Institutions Across the Nation |

2. Solutions Networks Sub-Element

The overall objectives of a Solutions Networks are to identify, publish, disseminate and periodically update an extensive, comprehensive list of candidate solutions derived from NASA Earth-science research results that have the potential to enhance future operational systems for societal benefit. The process for deriving these Candidate Solutions involves combining models, un-applied¹ observations and measurements, and other published Earth science research results to advance NASA's assets for decision support enhancement. This process is supported through Knowledge Management and Earth Science e-Government activities that aid in establishing and maintaining relationships with Earth science research organizations and provide a publicly accessible knowledge base of research-related activities, capabilities, plans and results.

The Solutions Networks project is a systems approach of the Applied Sciences Program theme to enable creative solutions for societal benefits to be greater than the sum of the parts administered by the Earth science theme. Each year, the Earth Science Division administers approximately 2000 funded projects. These projects comprise research grants, Earth observation technology and systems projects, education grants, and Applied Sciences Program grants. The challenge in achieving the goals and objectives of the Agency, Directorate, and Division—in order to deliver results that reflect the mission to “Study the Earth from space to advance scientific understanding and meet societal needs”—is the need to assimilate and integrate the results of all distributed science and technology research and development into focused solutions that are targeted at specific societal benefits.

The Solutions Networks project addresses this challenge by conducting projects in Earth Science research result evaluation, knowledge management, and Earth Science e-Government solutions.

The immediate goal of this Sub-Element is to rapidly produce a large inventory of Candidate Solutions during the first year of this Plan. In order to achieve this goal with minimal stress on existing budget resources, the Project will use appropriate communication, management, and project coordination mechanisms (e.g. targeted documentation, web portals, forums, network agents, review panels) that are already in place. Beginning in FY07, the Solutions Networks Council will administer all project activities. The council will be responsible for the implementation of a “hub” serving as a centralized function displaying and containing all pertinent aspects of Solutions Networks; these include but are not limited to Points of Contact (POCs), schedules, solutions-projects reviews, formulation reports, target initiatives and/or research priorities of need within the national applications areas, partner agency and organizational links, interface efforts with solicited projects – Decisions '05, definitions/processes significant to the success of Solutions Networks. This enables Solutions Networks to contribute to the NASA Applied Sciences Program, and to enable pathways for solutions to be contributed from funded organizations throughout the network.

¹ The term “unapplied” refers to currently operating NASA satellite-based instruments and models that have not been used in documented Earth Science Applications as well as next-generation NASA missions scheduled to be launched.

a. Earth Science Research Result Evaluation

The identification and evaluation of Candidate Solutions will be achieved through the evaluation of published Earth Science research results. The Project will utilize knowledge bases of the portfolio of Earth Science Division investments in order to identify, access, harness, and mine research results that could augment and potentially improve decision support tools and/or operational systems involving the twelve applications of national priority. This process will be supplemented by coordinating and optimizing the interaction of other established networked organizations engaged in “solutions generation” to develop candidate configuration and ideas for future use in the Applied Sciences (solicitations, RPC, ISS). The use of trained human capital and science research personnel is critical for describing and assimilating significant advancements in Earth science that can contribute to National Applications projects and partner agency policy matters. The Candidate Solutions will be published and disseminated broadly to inform and assist the Applied Sciences Program’s program managers, partner agencies, and the community. Instructions for generating these candidate solutions can be found in the Solutions Networks Guidelines found in Appendix D.

b. Knowledge Management

This activity supports Solutions Networks by providing key tools that will be used for Earth Science Research Result Evaluation. The primary activities include identifying, establishing, evolving, and maintaining Knowledge Bases that collectively support the ability to perform an evaluation of NASA capabilities with the potential to contribute input information to specific decision support tools identified by and with partner organizations. Included in this are the currently supported NASA Applied Sciences Program Research and System Components Knowledge Bases. These Knowledge Bases will be extended to include the results of collected output from Solutions Network and RPC activities. This Knowledge Base will include not only the approved Formulation Reports but also the collective wisdom from the research evaluation activity.

The identification and evaluation of Candidate Solutions requires a detailed understanding of Earth Science Division mission observations, model predictions, funded research results from NASA’s Research and Analysis Program, and their respective ability to be assimilated into decision support tools. This requires access to a resource base that includes all observations from current and planned Earth-system science observatories resulting from NASA research and development. The Research Project Knowledge Base will provide Program and project Managers and the Solutions Networks staff with one tool to facilitate Candidate Solution generation. The Systems Components Knowledge Base systematically catalogues the NASA Earth system observation missions, sensors, models, data products, model products, and related systems capacities for consideration in NASA Applied Sciences Program projects. Value accrues from enhanced decision-making, enhanced program/project effectiveness, reduced uncertainty, and optimization of research and development efforts. These Knowledge Bases will be used in conjunction with other existing resources by the Solutions Networks team to create the capability to systematically identify, evaluate, and document a wealth of creative Candidate Solutions for societal benefit.

c. Earth Science e-Government Solutions

The purpose of this activity is to support Solutions Networks by maintaining links to national and international partner organizations for the Earth system science community - CCSP, CCTP, IPCC, USWRP, WMO, Earthscope, SESWG, USGEO, GEOSS, GEO, FGDC, GOS, NSF, Cyberinfrastructure, WSSD, ESMF, High-end computing initiatives, Grid Computing, Web Services, Commercial Remote Sensing Policy (CRSP) Implementation Working Group, International Society of Photogrammetry and Remote Sensing (ISPRS), and the Committee of Earth Observing States (CEOS) – and design, develop, host, and maintain two websites for our partners, inter-Agency and international programs, and associated organizations.

These include:

- USGEO
- Global Positioning System (GPS) Applications Exchange

The development and maintenance of these websites are instrumental in conveying information to the community-of-practice.

3. Geoscience Standards and Interoperability (GSI) Sub-Element

The GSI function emphasizes full and open access to data, applications of data, and enabling technologies that contribute to furthering the interoperability of disparate Earth system observation sources, data products, data handling systems, and model outputs – all as inputs to decision support systems that are the targets of integrated system solutions. NASA has responsibilities and commitments to facilitate development of, and comply with, national and international standards and interoperability protocols for the exchange of data and information produced by federal agencies. GSI supports this effort through seamless access to NASA's Earth and planetary science data. This cannot be achieved by NASA alone, and requires the collaboration of many partners from the governmental, academic, and private sectors.

The Geosciences Interoperability Office (GIO) performs GSI activities. The GIO supports this collaboration through the development and adoption of technologies that encourage geoscience interoperability. Geosciences interoperability is the ability of disparate, independent information systems to work together in accessing, manipulating and utilizing geoscience data.

Interoperability relies on standards based data services; recognized data formats; structured dataset descriptions (metadata); and shared terminology. The adoption of existing vendor-neutral standards from recognized standards-developing organizations allows seamless access to NASA's many science data products, and the unencumbered exchange of scientific data between members of a diverse collaborative environment. The GIO focuses its activities towards the three key areas of Geosciences Interoperability Development, Adoption, and Utilization.

a. Geoscience Interoperability Development

Geoscience Interoperability Development is focused towards encouraging the development of geoscience interoperability technologies. GIO implements, promotes, and (when necessary) helps to shape the development of, open standards, services and tools for improved geoscience interoperability both within NASA and in its interagency partnerships.

The implementation of geoscience interoperability standards and tools augment the ability to access, use and share NASA science results. GIO's Geoscience Interoperability Development

focus area includes testbeds, pilot and prototyping, and development of consensus built geoscience interoperability standards that further NASA's capabilities in sharing its extensive Earth Science research results. Key activities in this area include:

- Standing up a Collaborative Portal in a testing and validation environment
- Supporting the establishment of Communities of Practice (COPs) through the proactive engagement of users and the population and maintenance of domain focuses within the Collaborative Portal
- Establishing a Interoperability Testbed based on Service Oriented Architecture and incorporating linkages to NASA's High Performance Computing Capability

b. Geoscience Interoperability Adoption

Geoscience Interoperability Adoption is focused towards enabling geoscience interoperability within NASA's earth science programs. The implementation of geoscience interoperability through open-standards, architectures and schemas allows any user of science data to access and apply the desired research results thus increasing efficiency and productivity and ultimately the demand for NASA geoscience results. NASA is a strategic member in the OGC and the International Standards Organization (ISO) committee working on ISO/TC211, a geographic information series of standards. These contributions are crucial to the focus and development of geospatial interoperability standards being universally adopted. GSI ensures NASA's Applied Science Program adheres to commitments to the FGDC, GOS, the President's Management Agenda, and e-Government initiatives.

As part of this agency-wide effort, GIO coordinates and aids in the implementation of geoscience interoperability standards, system architectures, assesses areas within the Applied Sciences Program and NASA along with other federal, state, and local agencies in which interoperability is necessary, begins communications, and develops strategies to educate, develop, and implement geoscience data interoperability. The development and implementation process is accomplished through memberships, partnerships, and participation in groups and organizations that are working towards similar interoperability goals.

One objective of the GIO is to encourage the adoption of open access technologies for NASA data. GIO's goal of implementing open geoscience interoperability standards that apply to NASA's requirements would result in advanced access and use of NASA's Earth-Science knowledge base, data, and model outputs. A key element of achieving this goal is to integrate geoscience interoperability technologies within NASA's IT systems architectures. Building on the Integrated System Solutions architecture developed within Applied Sciences and adopted within the international science community, NASA will be able to coordinate and share its data use efforts worldwide. Enabling geoscience interoperability within NASA's programs will improve the return from those investments by facilitating new customers and applications for NASA's research results. Adoption of geoscience interoperability technology will be encouraged through engagement of NASA's engineering expertise. Key activities in this area include:

- Development of a common understanding of geoscience interoperability technologies that support known end-user application needs, and its promotion within NASA and our Federal and International Partners

c. Geoscience Interoperability Utilization

Geoscience Interoperability Utilization supports the integration of geoscience interoperability within science communities and federal partners. Federal Partner easy access of NASA data will strengthen the outcomes for NASA, our partners, and society, by enhancing their knowledge of Earth Science and enabling more informed decision-making, resulting in national and global economic and societal benefits. Through the Applied Sciences Program the Geosciences

Interoperability Office facilitates the use of NASA's science information by decision-makers, scientists, and as part of the Crosscutting Solutions element of the Applied Sciences Program, GIO offers expertise on current and future information technologies that are directly applicable to the access of Earth science data and predictions among the Observations, Models and Decision Support System components of the Integrated Systems Solution architecture. Utilization of NASA's research results through new technology will be promoted through user community engagement. Key activities in this area include:

- Engaging user communities to develop understanding of Geoscience Interoperability with NASA data, focusing initially on the nine Societal Benefit areas, the twelve National Applications and GEOSS.
- Leveraging user community input to validate technology development.

4. Human Capital Development Sub-Element

This strategic Sub-Element is chartered with the responsibility to:

- Develop a cadre of human resources possessing real world experience associated with integrated system solutions using results from NASA Earth system science research, systems engineering, and partner agency decision support tools.
- Create solutions using Earth system science research results as inputs to decision support systems for state, local, and tribal applications consistent with the identified Applications of National Priority.
- Expand the network of organizations and individuals benefiting from, and contributing to, the Applied Sciences Program.

a. DEVELOP

The HCD Sub-Element is primarily accomplished through DEVELOP—a student-based applications and outreach program. Students from high schools and universities throughout the country employ network and systems approaches in a structured project environment to research issues of community concern based on requests from state, local, and tribal governments. Students are sponsored to develop prototype solutions based on Earth system science results including space-based observations, science models, and enhanced decision support systems. The results are demonstrated at high-level regional and national forums such as Governor's conferences, showcasing the utility of Earth-system science knowledge. DEVELOP fills a niche for rapidly prototyping solutions for local applications with the benefit of developing intellectual capital for extending capacity to be adopted or adapted for national, regional, or international applications.

DEVELOP is a leveraged project with partnering support from industry, federal agencies, and non-profit institutions and state-based organizations.

The DEVELOP National Program Office is located at Langley Research Center.

| Project: Interoperability Adoption | | | | Directed GSI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Interoperability Adoption</div> <p>Encourage adoption of open access technologies for NASA Earth science data, models, and knowledge bases. Engage the engineering expertise across NASA data system programs and employ concepts describing technology linkages that promote Earth science data interoperability. Continue interoperability standards bodies participation, alignment of processes to FEA and NASA EA, and strategic development of geosciences interoperability.</p> <p><i>Notes:</i></p> | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY07 | 460 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 480 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Myra Bambacus GSFC | GSFC | 10/1/06 - 9/30/07 | | FY09 | 500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 525 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 540 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding-right: 10px;"><i>Earth Science Products</i></div> <div> mission: sensor: products: models: </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Project: Interoperability Development - Portal | | | | | Directed GSI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Interoperability Development - Portal</div> <p>Collaborative Portal Project for the Earth Science Gateway deployment, development and collaboration in support of National Applications, Rapid Prototyping Capability, ESIP EIE Portal and continued functionality improvements based on collaborative community requirements.</p> <p><i>Notes:</i></p> | | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 310 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 330 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Myra Bambacus GSFC | GSFC | 10/1/06 - 9/30/07 | | FY09 | 350 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 370 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 390 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <p style="text-align: center;"><i>Other Apps.</i></p> <hr/> <p>Air Quality, Coastal Mgt</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding-right: 10px;"> <i>Earth Science Products</i> </div> <div> <p>mission:</p> <p>sensor:</p> <p>products:</p> <p>models:</p> </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Project: Interoperability Development -Interoperability Testbed | | | | | Directed GSI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Interoperability Development - Testbed</div> <p>Establish deploy testbed environment to integrate web services and High Performance Computing (HPC) services within Service Oriented Architectures. Establish interoperability with Project Columbia (GSFC), Earth Science Gateway (ESG), MSU-RPC environment and develop interface with NASA DAACs.</p> <p><i>Notes:</i></p> | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY07 | 510 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 530 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Myra Bambacus GSFC | GSFC | 10/1/06 - 9/30/07 | | FY09 | 550 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 575 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 590 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> <i>Earth Science Products</i> </div> <div> mission: sensor: products: models: </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u><i>Deliverables</i></u></th> <th style="text-align: left;"><u><i>End Date</i></u></th> <th style="text-align: left;"><u><i>IBPD Metric #</i></u></th> <th style="text-align: left;"><u><i>DELIVERED?</i></u></th> </tr> </thead> <tbody> <tr> <td>Establish testbed environment</td> <td>6/30/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>DAAC Services Deployment</td> <td>9/28/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Model Access Connectivity</td> <td>9/28/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Testbed Demonstration</td> <td>9/28/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Federal Partner Access Tests</td> <td>9/28/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Earth Obsv. Scenario,demoDVD</td> <td>12/20/2006</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> </tbody> </table> | | | | | | | <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | Establish testbed environment | 6/30/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | DAAC Services Deployment | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Model Access Connectivity | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Testbed Demonstration | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Federal Partner Access Tests | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Earth Obsv. Scenario,demoDVD | 12/20/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | |
| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Establish testbed environment | 6/30/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DAAC Services Deployment | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Model Access Connectivity | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Testbed Demonstration | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Federal Partner Access Tests | 9/28/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Earth Obsv. Scenario,demoDVD | 12/20/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: Interoperability Utilization - NA and Crosscutting Support | | | | | Directed GSI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|-----------------------------|--|------|---|-----|----------------------------|------------------------|-----------------------------|--------------------------|--------------------------------------|-----------|--|---|--|--|--|---|-----------------------------|-----------|--|---|--------------------------|------------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Interoperability Utilization - NA and XC Support</div> <p>Understand and characterize federal partners and geoscience community usage/needs of Earth science data for applications projects, initiatives benefiting society via interoperable means. Utilize expertise in current/future IT applications for Earth science data to further evaluate technology needs that will engage the user community in efforts/activities (prototyping) the Applied Sciences Program is implementing. Help to foster a self-sustaining environment/community (Portlet) that will discover and utilize Earth science data, models, tools for applications projects within the Applied Sciences.</p> <p><i>Notes:</i> Portlet development will center around Water & Air Quality topics.</p> | | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 510 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 530 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Myra Bambacus GSFC | GSFC | 10/1/06 - 9/30/07 | NOAA, ESIP | FY09 | 550 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 575 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 590 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding-right: 10px;"> <i>Earth Science Products</i> </div> <div> <p>mission:</p> <p>sensor:</p> <p>products:</p> <p>models:</p> </div> </div> | | | <p><i>Other Apps.</i></p> <hr/> <p>Water Management, Air Quality</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u><i>Deliverables</i></u></th> <th style="text-align: left;"><u><i>End Date</i></u></th> <th style="text-align: left;"><u><i>IBPD Metric #</i></u></th> <th style="text-align: left;"><u><i>DELIVERED?</i></u></th> </tr> </thead> <tbody> <tr> <td>Natnl. Apps. needs & priorities rpt.</td> <td>1/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>ESIP EIE Portlets-AQ; Water</td> <td>7/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>RPC Data Access Workshop</td> <td>11/30/2006</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> </tbody> </table> | | | | | | | <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | Natnl. Apps. needs & priorities rpt. | 1/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | <input type="radio"/> Yes <input checked="" type="radio"/> No | ESIP EIE Portlets-AQ; Water | 7/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | RPC Data Access Workshop | 11/30/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No |
| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Natnl. Apps. needs & priorities rpt. | 1/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ESIP EIE Portlets-AQ; Water | 7/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPC Data Access Workshop | 11/30/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: Interoperability Utilization - Outreach | | | | | Directed GSI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-----------------------------|---|--------------------|--|-----|----------------------------|------------------------|-----------------------------|--------------------------|----------------------------|--|--|---|-------------------------------|-----------|--|---|------------------------------|-----------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Interoperability Utilization - Outreach</div> <p>Program Management- Develop program interactions, communications, and collaborations with internal and external partners. Earmark management - IAGT, RACNE, Coppin State - encourage community participation in Applied Sciences projects through the capabilities of GIO.</p> <p><i>Notes:</i></p> | | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 410 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 430 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Myra Bambacus GSFC | GSFC | 10/1/06 - 9/30/07 | | FY09 | 475 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 450 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 490 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Earth Science Products</i> | mission: sensor: products: models: | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Management/Reports | | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Earmark status reports-mid yr | 4/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Earmark status reports-final | 9/30/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: Human Capital Development - Pilot Projects | | | | | Directed HCD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|-----------------------------|---|--------------------|--|------|----------------------------|------------------------|-----------------------------|--------------------------|--------------------------------|-----------|--|---|------------------------------------|------------|--|---|----------------------------------|-----------|--|---|--------------------------------|-----------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <div style="border: 1px solid black; padding: 2px; margin-bottom: 10px;">Human Capital Development - Pilot Projects</div> <p>DEVELOP—a multi-disciplinary student-based applications and outreach program dedicated to characterizing applications solutions and exploring the uses of Earth science research results in National Applications policy and decision-making activities.</p> <p>Notes:</p> | | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 1600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 1600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Michael Ruiz LARC | GSFC, ARC, SSC, MSFC | 10/1/200 - 9/31/200 | So. Growth Policy Board, W. Governor's Assoc. | FY09 | 1600 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 1700 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 1800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"><i>Earth Science Products</i></div> <div> mission: sensor: products: models: </div> </div> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RPC Experiment Plan Generation | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pilot Projects Fall Briefing to HQ | 12/13/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SN Candidate Solution generation | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Pilot Projects Summer Briefing | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: IBS - Rapid Prototyping Capability | | | | | Directed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|-----------------------------|---|--------------------|--|------|----------------------------|------------------------|-----------------------------|--------------------------|----------------------|-----------|--|---|---------------------|-----------|--|---|----------------------|-----------|--|---|----------------------|-----------|--|---|---------------------|-----------|--|---|---------------|----------|--|---|----------------|-----------|--|---|--|--|--|--|
| | | | | | IBS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">IBS - Rapid Prototyping Capability</div> <p>Directed activities at five NASA Centers demonstrating the potential use and benefit of NASA Earth Science research results in operational systems; and potential enhancement to decision support tools. Public, searchable website or "hub" will be developed to contain Applied Sciences prototype activities.</p> <p><i>Notes:</i> SSC and LaRC will conduct and complete the first of their experiments by March 31, 2007. The SSC, GSFC, and MSFC will be involved in hub development</p> | | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 2651 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 2900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ted Mason SSC | MSFC, GSFC, LaRC, ARC | 10/1/06 - 9/30/07 | | FY09 | 2800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 2800 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 2900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); padding-right: 10px;"> <i>Earth Science Products</i> </div> <div> <p>mission:</p> <p>sensor:</p> <p>products:</p> <p>models:</p> </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u><i>Deliverables</i></u></th> <th style="text-align: left;"><u><i>End Date</i></u></th> <th style="text-align: left;"><u><i>IBPD Metric #</i></u></th> <th style="text-align: left;"><u><i>DELIVERED?</i></u></th> </tr> </thead> <tbody> <tr> <td>MSFC - 3 experiments</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>SSC - 3 experiments</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>GSFC - 3 experiments</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>LaRC - 2 experiments</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>ARC - 2 experiments</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Hub prototype</td> <td>2/1/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Hub functional</td> <td>7/15/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td></td> <td></td> <td></td> <td><input type="radio"/> Yes <input type="radio"/> No</td> </tr> </tbody> </table> | | | | | | | <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | MSFC - 3 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | SSC - 3 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | GSFC - 3 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | LaRC - 2 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | ARC - 2 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Hub prototype | 2/1/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Hub functional | 7/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No |
| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MSFC - 3 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSC - 3 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GSFC - 3 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LaRC - 2 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ARC - 2 experiments | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hub prototype | 2/1/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hub functional | 7/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: IBS - JACIE | | | | Directed IBS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|-----------------------------|---|--|-----|----------------------------|------------------------|-----------------------------|--------------------------|----------------------------|----------|--|---|-------------------------|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">IBS - JACIE</div> <p>Generate a plan outlining the national, commercial imagery evaluation needs of NASA's Research and Analysis community that the calibration/validation competency, existing at the SSC, can support.</p> <p><i>Notes:</i></p> | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY07 | 275 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ted Mason SSC | | 10/1/06 - 9/30/07 | | FY09 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"><i>Earth Science Products</i></div> <div> mission: sensor: products: models: </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plan complete and reviewed | 6/1/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| JACIE projects complete | | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: IBS - Grants Management | | | | Directed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|-----------------------------|---|--|-----|----------------------------|------------------------|-----------------------------|--------------------------|--------------------------------------|-----------|--|---|--------------------------------------|-----------|--|---|-----------------------------|-----------|--|---|-----------------------------|-----------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | IBS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">IBS - Grants Management</div> <p>Place and monitor earmark projects Decisions '04, Decisions '05 projects, and the Mississippi Research Consortium (MRC) projects (FY05,06).</p> <p><i>Notes:</i> Utah State University Earmark: On Target Geospatial Toolkit: Expanding Impacts to Rural America</p> | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center; margin-top: 20px;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY07 | 350 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Ted Mason SSC | | 10/1/06 - 9/30/07 | | FY09 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 0 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="margin-right: 10px;"> <i>Earth Science Products</i> </div> <div> mission: sensor: products: models: </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Utah St. Univ. earmark status report | 3/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Utah St. Univ. earmark status report | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MRC projects status reports | 4/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MRC projects status reports | 9/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: Research Result Evaluation - Candidate Solution Generation | | | | | Directed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|-----------------------------|---|------|---|------|----------------------------|------------------------|-----------------------------|--------------------------|-------------------------------|-----------|--|---|------------------------------|-----------|--|---|-------------------------------|-----------|--|---|-------------------------------|-----------|--|---|---------------|------------|--|---|----------------|-----------|--|---|------------------------------------|-----------|--|---|------------------------------------|-----------|--|---|
| | | | | | SN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Candidate Solution Generation</div> <p>Generate solutions formulation reports evaluating the use of NASA Earth Science research results application in decision support systems or future operational systems.</p> <p>Create a SN hub containing all "facets" of solutions generation knowledge, definitions, activities, report summaries, results, and research-related links.</p> <p><i>Notes:</i></p> | | | | | <p style="text-align: center;"><i>ISS?</i></p> <p style="text-align: center;"><input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 1780 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 2100 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Troy Frisbie SSC | LaRC, MSFC, GSFC, | 10/1/06 - 9/30/07 | | FY09 | 2400 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 2700 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 2900 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); margin-right: 10px;"> <i>Earth Science Products</i> </div> <div> <p>mission:</p> <p>sensor:</p> <p>products:</p> <p>models:</p> </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u><i>Deliverables</i></u></th> <th style="text-align: left;"><u><i>End Date</i></u></th> <th style="text-align: left;"><u><i>IBPD Metric #</i></u></th> <th style="text-align: left;"><u><i>DELIVERED?</i></u></th> </tr> </thead> <tbody> <tr> <td>MSFC (30 formulation reports)</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>SSC (50 formulation reports)</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>GSFC (30 formulation reports)</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>LaRC (50 formulation reports)</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Hub prototype</td> <td>12/31/2006</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Hub functional</td> <td>6/15/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Infomart status report (MSFC,LaRC)</td> <td>3/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Infomart status report (MSFC,LaRC)</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> </tbody> </table> | | | | | | | <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | MSFC (30 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | SSC (50 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | GSFC (30 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | LaRC (50 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Hub prototype | 12/31/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Hub functional | 6/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Infomart status report (MSFC,LaRC) | 3/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Infomart status report (MSFC,LaRC) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No |
| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MSFC (30 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SSC (50 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GSFC (30 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LaRC (50 formulation reports) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hub prototype | 12/31/2006 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Hub functional | 6/15/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Infomart status report (MSFC,LaRC) | 3/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Infomart status report (MSFC,LaRC) | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Project: Knowledge Management - System Components/Research Knowledge Bases | | | | Directed SN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---------------------------|-----------------------------|---|--|-----|----------------------------|------------------------|-----------------------------|--------------------------|-------------------------------|-----------|--|---|-----------------------------------|-----------|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">Knowledge Management</div> <p>Update Earth science assets information for use in solutions generation. Develop a maintenance plan. Develop searchable system containing collective Earth science research wisdom and attributes contributing to candidate solution generation.</p> <p><i>Notes:</i> Both knowledge bases will follow a prescribed plan facilitating solution generation processes in accordance with the guidance of the Solutions Networks Council. System Components KB (\$150K); Research Projects KB (\$350K)</p> | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY07 | 500 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 250 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Troy Frisbie SSC | | 10/1/06 - 9/30/07 | | FY09 | 200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | 200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | 200 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> <i>Earth Science Products</i> </div> <div> mission: sensor: products: models: </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u><i>Deliverables</i></u></th> <th style="text-align: left;"><u><i>End Date</i></u></th> <th style="text-align: left;"><u><i>IBPD Metric #</i></u></th> <th style="text-align: left;"><u><i>DELIVERED?</i></u></th> </tr> </thead> <tbody> <tr> <td>System Components KB complete</td> <td>6/30/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr> <td>Research Projects KB - functional</td> <td>8/31/2007</td> <td></td> <td><input type="radio"/> Yes <input checked="" type="radio"/> No</td> </tr> <tr><td> </td><td></td><td></td><td><input type="radio"/> Yes <input type="radio"/> No</td></tr> <tr><td> </td><td></td><td></td><td><input type="radio"/> Yes <input type="radio"/> No</td></tr> <tr><td> </td><td></td><td></td><td><input type="radio"/> Yes <input type="radio"/> No</td></tr> <tr><td> </td><td></td><td></td><td><input type="radio"/> Yes <input type="radio"/> No</td></tr> <tr><td> </td><td></td><td></td><td><input type="radio"/> Yes <input type="radio"/> No</td></tr> <tr><td> </td><td></td><td></td><td><input type="radio"/> Yes <input type="radio"/> No</td></tr> </tbody> </table> | | | | | | <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | System Components KB complete | 6/30/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | Research Projects KB - functional | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | | | <input type="radio"/> Yes <input type="radio"/> No | | |
| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| System Components KB complete | 6/30/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Research Projects KB - functional | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | |
|--|---------------------------|-------------------|-----------------|--|-----|
| Project: e-Government Solutions | | | | Directed | |
| | | | | SN | |
| <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;">e-Government Solutions</div> <p>Maintain websites - USGEO, GPS Applications Exchange - and produce plan to keep sites up and running; investigate national and international organizations and partners' initiatives contributing to the objectives of the Applied Sciences Program.</p> <p><i>Notes:</i> Investigation of websites for the Applied Sciences Program's activities and projects are to contribute to the Solutions Networks Council directions and guidance.</p> | | | | <p style="text-align: center;"><i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No</p> <p style="text-align: center;"><i>Budget (\$K)</i></p> | |
| | | | | FY07 | 300 |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 150 |
| Troy Frisbie SSC | | 10/1/06 - 9/30/07 | | FY09 | 100 |
| | | | | FY10 | 100 |
| | | | | FY11 | 100 |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | |
| <div style="display: flex; align-items: center;"> <div style="border-right: 1px solid black; padding-right: 10px; margin-right: 10px;"> <i>Earth Science Products</i> </div> <div> mission: sensor: products: models: </div> </div> | | | | | |
| <div style="display: flex; justify-content: space-between;"> <div><u><i>Deliverables</i></u></div> <div><u><i>End Date</i></u></div> <div><u><i>IBPD Metric #</i></u></div> <div><u><i>DELIVERED?</i></u></div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>Evaluate website requirements</div> <div>2/28/2007</div> <div> <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Yes <input checked="" type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Yes <input type="radio"/> No </div> </div> | | | | | |

| Project: Institute of Global Environment & Society, Inc. (IGES) | | | | | Solicited SN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---------------------------|-----------------------------|---|--------------------|---|-----|----------------------------|------------------------|-----------------------------|--------------------------|-------------------------|-----------|--|---|-------------------------|-----------|--|---|--|--|--|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| Institute of Global Environment & Society, Inc. WaterNet: A Water Cycle Solutions Network Project will evolve a Solutions Network encompassing the water National Application. Several of the other twelve national applications are associated, specifically, air quality, energy, and aviation. <i>Notes:</i> Status reports are in addition to those mentioned in WaterNet proposal. These reports are in support of the Crosscutting Solutions mid-year and end-of-year status reviews | | | | | ISS? <input type="radio"/> Yes <input checked="" type="radio"/> No Budget (\$K) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | FY07 | 691 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 693 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Vern Vanderbilt ARC | | 10/1/06 - 9/30/07 | | FY09 | 700 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | FY11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| <div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;"> <i>Earth Science Products</i> </div> <div> mission: sensor: products: models: </div> </div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WaterNet status reports | 3/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| WaterNet status reports | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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|---|---|-----------------------------|---|---|-----|
| Project: North Olympic Peninsula Resource Conservation & Development Council | | | | Solicited SN | |
| Resource Conservation & Development | | | | <i>ISS?</i> <input type="radio"/> Yes <input checked="" type="radio"/> No <i>Budget (\$K)</i> | |
| Evolving a Solutions Network of Resource Conservation and Development (NOP RC&D) Councils, Watershed Management Teams, and NASA Research Institutions Across the Nation. <i>Notes:</i> Status reports are in support of the Crosscutting Solutions mid-year and end-of-year status reviews. | | | | FY07 | 577 |
| <i>Project Monitor and Center</i> | <i>Other NASA Centers</i> | <i>Timeframe</i> | <i>Partners</i> | FY08 | 537 |
| Jennifer Dungan ARC | | - | | FY09 | 484 |
| | | | | FY10 | |
| | | | | FY11 | |
| <i>Principal Investigator(s)</i> | | | | <i>Other Apps.</i> | |
| <i>Earth Science Products</i> | mission: sensor: products: models: | | | | |
| <u><i>Deliverables</i></u> | <u><i>End Date</i></u> | <u><i>IBPD Metric #</i></u> | <u><i>DELIVERED?</i></u> | | |
| NOP RC&D Status reports | 3/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | |
| NOP RC&D Status reports | 8/31/2007 | | <input type="radio"/> Yes <input checked="" type="radio"/> No | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | |
| | | | <input type="radio"/> Yes <input type="radio"/> No | | |

V. Schedules, Milestones and Performance Measures

Schedule and Milestones

In FY07, the Crosscutting Solutions program will support and implement 200 peer-reviewed candidate configurations from Solutions Networks and 20 peer-reviewed RPC experiments. These activities and all other Crosscutting Solutions projects will be subject to quarterly and mid-year reviews.

Performance Measures

The Crosscutting Solutions Program has constructed projects with deliverables addressing the annual performance goals (APGs), stated in the President's FY 2007 Budget Request (National Aeronautics and Space Administration, 2006. *President's FY 2007 Budget Request*. p. SAE SMD 4-71. http://www.nasa.gov/pdf/142458main_FY07_budget_full.pdf), to complete five studies on plans to transition the results of NASA R& D (spacecraft, instruments, models, etc.) with the potential to improve future operational systems of partner agencies, meets the goals stated in the 2006 NASA Strategic Plan that addresses the *President's Vision for U.S. Space Exploration*, and the Agency's vision stated in the 2004 Earth Science Applications Plan.

V. Budget: FY07-11

The following table lists the Crosscutting Solutions Program budget (procurement) for FY2007 - FY2011

| <u>Project</u> | FY07 (\$K) | FY08 (\$K) | FY09 (\$K) | FY10 (\$K) | FY11 (\$K) |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| Interoperability Adoption | 460 | 480 | 500 | 525 | 540 |
| Interoperability Development - Portal | 310 | 330 | 350 | 370 | 390 |
| Interoperability Development -Interoperability Testbed | 510 | 530 | 550 | 575 | 590 |
| Interoperability Utilization - NA and Crosscutting Support | 510 | 530 | 550 | 575 | 590 |
| Interoperability Utilization - Outreach | 410 | 430 | 475 | 450 | 490 |
| Human Capital Development - Pilot Projects | 1600 | 1600 | 1600 | 1700 | 1800 |
| IBS - Rapid Prototyping Capability | 2651 | 2900 | 2800 | 2800 | 2900 |
| IBS - JACIE | 275 | 0 | 0 | 0 | 0 |
| IBS - Grants Management | 350 | 0 | 0 | 0 | 0 |
| Research Result Evaluation - Candidate Solution Generation | 1780 | 2100 | 2400 | 2700 | 2900 |
| Knowledge Management - System Components/Research Knowledge Bases | 500 | 250 | 200 | 200 | 200 |
| e-Government Solutions | 300 | 150 | 100 | 100 | 100 |
| Institute of Global Environment & Society, Inc. (IGES) | 691 | 693 | 700 | | |
| North Olympic Peninsula Resource Conservation & Development Council | 577 | 537 | 484 | | |
| Total = \$ | 10924 | 10530 | 10709 | 9995 | 10500 |

VI. Schedule and Milestones for Crosscutting Solutions

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|--|-------------------|---------------------------------|-----------------|
| Interoperability Adoption | 10/1/06 | GIRM update | 9/28/2007 |
| | | Technology Roadmap | 9/28/2007 |
| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
| Interoperability Development - Portal | 10/1/06 | Deployments of ESG - GMU | 1/31/2007 |
| | | ESG Training | 3/31/2007 |
| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
| Interoperability Development -Interoperability Testbed | 10/1/06 | Establish testbed environment | 6/30/2007 |
| | | DAAC Services Deployment | 9/28/2007 |
| | | Model Access Connectivity | 9/28/2007 |
| | | Testbed Demonstration | 9/28/2007 |
| | | Federal Partner Access Tests | 9/28/2007 |
| | | Earth Obsv. Scenario,demoDVD | 12/20/2006 |
| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
| Interoperability Utilization - NA and Crosscutting Support | 10/1/06 | Natnl. Apps. needs & priorities | 1/31/2007 |
| | | ESIP EIE Portlets-AQ; Water | 7/31/2007 |
| | | RPC Data Access Workshop | 11/30/2006 |
| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
| Interoperability Utilization - Outreach | 10/1/06 | Project Management/Reports | |
| | | Earmark status reports-mid yr | 4/15/2007 |
| | | Earmark status reports-final | 9/30/2007 |
| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
| Human Capital Development - Pilot Projects | 10/1/2007 | RPC Experiment Plan | 8/31/2007 |
| | | Pilot Projects Fall Briefing to | 12/13/2006 |
| | | SN Candidate Solution | 8/31/2007 |
| | | Pilot Projects Summer Briefing | 8/31/2007 |
| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
| IBS - Rapid Prototyping Capability | 10/1/06 | MSFC - 3 experiments | 8/31/2007 |
| | | SSC - 3 experiments | 8/31/2007 |
| | | GSFC - 3 experiments | 8/31/2007 |
| | | LaRC - 2 experiments | 8/31/2007 |
| | | ARC - 2 experiments | 8/31/2007 |
| | | Hub prototype | 2/1/2007 |
| | | Hub functional | 7/15/2007 |

VI. Schedule and Milestones for Crosscutting Solutions

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|----------------|-------------------|----------------------------|-----------------|
| IBS - JACIE | 10/1/06 | Plan complete and reviewed | 6/1/2007 |
| | | JACIE projects complete | |

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|-------------------------|-------------------|-------------------------------|-----------------|
| IBS - Grants Management | 10/1/06 | Utah St. Univ. earmark status | 3/31/2007 |
| | | Utah St. Univ. earmark status | 8/31/2007 |
| | | MRC projects status reports | 4/15/2007 |
| | | MRC projects status reports | 9/15/2007 |

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|--|-------------------|-------------------------------|-----------------|
| Research Result Evaluation - Candidate Solution Generation | 10/1/06 | MSFC (30 formulation reports) | 8/31/2007 |
| | | SSC (50 formulation reports) | 8/31/2007 |
| | | GSFC (30 formulation reports) | 8/31/2007 |
| | | LaRC (50 formulation reports) | 8/31/2007 |
| | | Hub prototype | 12/31/2006 |
| | | Hub functional | 6/15/2007 |
| | | Infomart status report (MSFC, | 3/31/2007 |
| | | Infomart status report (MSFC, | 8/31/2007 |

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|---|-------------------|------------------------|-----------------|
| Knowledge Management - System Components/Research Knowledge Bases | 10/1/06 | System Components KB | 6/30/2007 |
| | | Research Projects KB - | 8/31/2007 |

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|------------------------|-------------------|-------------------------------|-----------------|
| e-Government Solutions | 10/1/06 | Evaluate website requirements | 2/28/2007 |

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|--|-------------------|-------------------------|-----------------|
| Institute of Global Environment & Society, Inc. (IGES) | 10/1/06 | WaterNet status reports | 3/31/2007 |
| | | WaterNet status reports | 8/31/2007 |

| <i>Project</i> | <i>Start Date</i> | <i>Deliverable</i> | <i>End Date</i> |
|---|-------------------|-------------------------|-----------------|
| North Olympic Peninsula Resource Conservation & Development Council | | NOP RC&D Status reports | 3/31/2007 |
| | | NOP RC&D Status reports | 8/31/2007 |

Appendix A: Crosscutting Solutions Current and Projected Budget

The Crosscutting Solution Planned Allocations are presented in Tables 4 and 5.

Table 4: Crosscutting Solutions FY07 Budget Allocations

| DESCRIPTION | FY07 \$K |
|---|----------|
| Crosscutting Solutions Procurement Allocation | |
| <i>Integrated Benchmarked Systems Allocation</i> | 3,200 |
| <i>Solutions Networks Allocation</i> | 2,500 |
| <i>Geoscience Standards and Interoperability Allocation</i> | 2,250 |
| <i>Human Capital Development Allocation</i> | 1,600 |

Table 5: Crosscutting Solutions Projected Budget FY07-11 (Full-Cost)

| | FY07 (\$K) | FY08 (\$K) | FY09 (\$K) | FY10 (\$K) | FY11 (\$K) |
|------------------------|------------|------------|------------|------------|------------|
| Crosscutting Solutions | 9,550 | 9,300 | 9,500 | 10,000 | 10,500 |

Appendix B: Acronyms and Websites

Acronyms:

| | | | |
|----------|---|--------|--|
| AGU | American Geophysical Union | IBPD | Integrated Budget and Performance Document |
| AIWG | Applications Interagency Working Group | IBS | Integrated Benchmarked Systems |
| AMS | American Meteorological Society | IEEE | Institute of Electrical and Electronics Engineers |
| ARC | Ames Research Center | IGARSS | International Geosciences and Remote Sensing Symposium |
| ARCs | Affiliated Research Center | IPCC | International Panel on Climate Change |
| BAA | Broad Agency Announcement | IRSE | International Symposium on Remote Sensing of Environment |
| CAN | Cooperative Agreement Notice | ISO | International Standards Organization |
| CCSP | Climate Change Science Program | ISPRS | International Society of Photogrammetry and Remote Sensing |
| CCTP | Climate Change Technology Program | ISS | Integrated System Solutions |
| CENR | Committee on Environment and Natural Resources | ITD | Institute for Technology Development |
| CENR/SDR | CENR Subcommittee on Disaster Reduction | IV&V | Independent Verification and Validation |
| CEOS | Committee on Earth Observing States | IWGEO | Interagency Working Group on Earth Observations |
| CLEAR | Center for Land Use and Education Research | JACIE | Joint Agency Commercial Imagery Evaluation |
| CRSP | Commercial Remote Sensing Policy | JCSDA | Joint Center for Satellite Data Assimilation |
| CRSSP | Commercial Remote Sensing Space Policy | JPL | Jet Propulsion Laboratory |
| CSTARS | Center for Southeastern Tropical Remote Sensing | LaRC | Langley Research Center |
| DAAC | Distributed Active Archive Center | MDSS | Maintenance Decision Support System |
| DFRC | Dryden Flight Research Center | MSFC | Marshall Space Flight Center |
| DSS | Decision Support System | NAS | National Academy of Sciences |
| DST | Decision Support Tool | NASA | National Aeronautics and Space Administration |
| ECHO | Earth observing system Clearing House | NGA | National Geospatial-Intelligence Agency |
| EIGS | Enterprise for Innovative Geospatial Solutions | NRA | NASA Research Announcement |
| EOSDIS | Earth Observing System Data Information System | NSF | National Science Foundation |
| ESG | Earth Science Gateway | NSGIC | National States Geographic Information Council |
| ESIP | Earth Science Information Partnership | OGC | OpenGIS Consortium |
| ESMF | Earth Science Model Framework | OMB | Office of Management and Budget |
| ESS | Earth System science | OSSE | Observing System Simulation Experiment |
| FEA | Federal Enterprise Architecture | PART | Program Assessment Rating Tool |
| FGDC | Federal Geographic Data Committee | PEN | Program Engineering Notebook |
| FHWA | Federal Highway Administration | PERS | Photogrammetric Engineering and Remote Sensing |
| FY | Fiscal Year | RACNE | Regional Applications Center for the Northeast |
| GAI | Geospatial Applications and Interoperability | REASON | Research, Education, and Applications Solutions Network |
| GCOS | Global Climate Observing System | R2O | Research to Operations |
| GEO | ad hoc Group on Earth Observations | SDP | Scientific Data Purchase |
| GIG | Global Information Grid | SEA | State Enterprise Architecture |
| GIO | Geospatial Interoperability Office | SESWG | Solid Earth Science Working Group |
| GNRI | Geospatial and Natural Resources Institute | SLT | State, Local, Tribal governments |
| GOOS | Global Ocean Observing System | SN | Solutions Network |
| GOS | Geospatial One Stop | SSC | Stennis Space Center |
| GPS | Global Positioning System | SSMF | Sun-Solar System Modeling Framework |
| GRID | Graphic Retrieval and Information Display | SUNY | State University of New York |
| GSFC | Goddard Space Flight Center | UMAC | Upper Midwest Aerospace Consortium |
| GSI | Geoscience Standards and Interoperability | USGS | United States Geological Survey |
| GTOS | Global Terrestrial Observing System | USWRP | United States Weather Research Program |
| HCD | Human Capital Development | V&V | Verification and Validation |
| HQ | NASA Headquarters | WMO | World Meteorological Organization |
| IAEGS | Institute for the Advancement of Geospatial Systems | WSSD | World Summit on Sustainable Development |

Websites:

NASA Applications Roadmaps and ISS Diagrams:
<http://www.earth.nasa.gov/roadmaps>
 NASA Applications Theme IBPD: <http://aiwg.gsfc.nasa.gov>
 NASA Earth Science Applications Plan:
<http://www.earth.nasa.gov/visions>
 Representative members of the community-of-practice for NASA
 Earth system science: [Webserv.gsfc.nasa.gov/images/aiwg.html](http://webserv.gsfc.nasa.gov/images/aiwg.html)

CCSP: <http://www.climate-science.gov>
 CCTP: <http://www.climate-technology.gov>
 CENR Interagency Working Group on Earth Observations:
<http://iwgeo.ssc.nasa.gov>

CENR/SDR: <http://www.sdr.gov>
 CRSSP: <http://www.crsp.usgs.gov>
 GEO: <http://earthobservations.org>
 IPCC: <http://www.ipcc.int>
 National Academy of Sciences Roundtable for Sustainability:
<http://www.nas.edu>
 U.S. Weather Research Program:
<http://www.oar.noaa.gov/organization/uswrp.html>
 WMO: <http://www.wmo.int>
 WSSD: <http://www.iied.org/wssd>